WHAT IS CLAIMED IS:

1. A connecting material for connecting a certain object to other object which connecting material comprises a solder material and a hydrogen storage metal material which is able to occlude hydrogen, wherein the hydrogen storage metal material is in the form of particles dispersed in the connecting material.

2. The connecting material according to claim 1, wherein the hydrogen storage metal material changes in its volume depending on a temperature and/or a hydrogen pressure of an atmosphere in which the hydrogen storage metal material is located.

3. The connecting material according to claim 1, wherein the hydrogen storage metal material is selected from the group of $LaNi_5$, $LaNi_{4.5}Al_{0.5}$, $Ti_{0.88}Zr_{0.12}Mn_{1.0}V_{0.4}Ni_{0.6}$, $LaNi_{4.5}Mn_{0.5}$ and Mg_2Ni, and Pd, V, Ti and Zr.

4. The connecting material according to claim 1, wherein the hydrogen storage metal material is in a state of storing substantially no hydrogen.

5. The connecting material according to claim 1, which connecting material is in the form of a so-called cream solder.

6. A connecting method of a certain object to other object by using the connecting material according to any

one of claim 1 to 5, which method comprises:

heating the connecting material located between these objects to melt the solder material followed by cooling the connecting material to form a connecting portion which connects these objects.

7. The connecting method according to claim 6, wherein said certain object is an electronic component and said other object is a circuit board.

8. A method of producing an electronic circuit board by mounting an electronic component onto a circuit board, wherein the connecting method according to claim 7 is used upon mounting the electronic component.

9. The method of producing an electronic circuit board according to claim 8,wherein the electronic circuit board is produced by mounting at least two electronic components onto the circuit board in which the hydrogen storage metal material contained in the connecting material which is used upon mounting at least one electronic component is different from the hydrogen storage metal material contained in the connecting material which is used upon mounting other at least one electronic component.

10. The method of producing an electronic circuit board according to claim 9, wherein said at least one electronic component is to be recovered separately from said other at least one electronic component upon

detaching the electronic components from the electronic circuit board for recovery.

11. A method of detaching a certain object from other object to which said certain object is connected by means of a connecting portion which is formed by the connecting material according to any one of claim 1 to 5, which method comprises:

locating the connecting portion in an atmosphere having a hydrogen occlusion condition which is sufficient to increase a volume of the hydrogen storage metal material in the form of particles which is comprised in the connecting portion and is in a state of storing substantially no hydrogen.

12. The method of detaching a certain object according to claim 11, wherein the hydrogen storage metal material in the form of the particles increases in its volume so that the connecting portion is weakened in the vicinity of the hydrogen storage metal material in the form of the particles.

13. The method of detaching a certain object according to claim 11, wherein said certain object is an electronic component and said other object is a circuit board.

14. The method of detaching a certain object according to claim 11, wherein the atmosphere having the

hydrogen occlusion condition has a hydrogen pressure in a range from 0.01 to 10 MPa.

15. The method of detaching a certain object according to claim 11, wherein the atmosphere having the hydrogen occlusion condition has a temperature in a range from room temperature to 150 °C.

16. The method of detaching a certain object according to claim 12, which method further comprises applying an external force to the weakened connecting portion.

17. A method of detaching at least two certain objects from other object to which said at least two certain objects are connected by means of connecting portions formed by the connecting materials according to any one of claim 1 to 5 respectively,

wherein a hydrogen storage metal material in the form of particles which is contained in the connecting material which forms the connecting portion to connect at least one certain object to said other object is different from a hydrogen storage metal material in the form of particles which is contained in the connecting material which forms the connecting portion to connect other at least one certain object said other object, and wherein the hydrogen storage metal materials are selected such that a volume of the latter hydrogen storage metal material does not

substantially increases in an atmosphere having a hydrogen occlusion condition which is sufficient to increase a volume of the former hydrogen storage metal material, and an atmosphere having a hydrogen occlusion condition which is sufficient to increase a volume of the latter hydrogen storage metal material is different from said atmosphere,

and which method comprises:

(a) locating said other object in the former atmosphere; and

(b) locating said other object in the latter atmosphere.

18. A method of detaching a certain object from other object, which method comprises weakening a connecting portion which connects said certain object to said other object and which is formed by the connecting material according to any one of claim 1 to 5, which method further comprises weakening the connecting portion by:

(c) locating the connecting portion in an atmosphere having a hydrogen occlusion condition which is sufficient to increase a volume of a hydrogen storage metal material in the form of particles which is contained in the connecting portion; and thereafter

(d) locating the connecting portion in an atmosphere having a hydrogen release condition which is sufficient to decrease a volume of the hydrogen storage metal material

in the form of the particles which volume has been increased.

19. The method of detaching a certain object according to claim 18, which method comprises conducting (c) and (d) repeatedly until the connecting portion is sufficiently weakened.

20. The method of detaching a certain object according to claim 18, which method further comprises applying an external force to the weakened connecting portion.